REMARKS/ARGUMENT

Claims 6-29 are pending. Claims 6, 7, 9, 10, 12, 13, 14, 16, 20, 21 and 22 have been amended. Claims 1-5 have been cancelled without prejudice. Claims 24-29 are added. Formal drawings are being submitted herewith to replace the drawing sheets originally filed. The new drawing sheets are simply clean copies of the drawings that were originally filed. No new matter has been added.

Claims 6, 9, 12, 13, 16, 21 and 28 are the independent claims.

Claim 13 was rejected under 35 U.S.C. § 112, second paragraph, as indefinite, for the reasons stated at item 3 of the Office Action. As shown above, that claim has been amended, inter alia, to clarify in the preamble that it is an independent claim. This amendment clearly obviates the rejection and the withdrawal of that rejection is requested.

It appears that Claims 1-11 and 16 were rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. Cancellation of claims 1-5 renders their rejection moot.

As to the § 101 rejection of claim 6, without conceding the propriety of the rejection, that claim has been amended to make even more clear that it is directed to a computerized method for controlling storage and retrieval of data in a memory by constructing a data structure in which items are stored for search. It is believed clear that such a process is statutory since it clearly is limited to a practical application of the data structure defined in the claim. See MPEP Section 2106, citing In re Alappat, 33 F.3d 1526, 1543, 31 USPQ2d 1545, 1556-57 (Fed. Cir. 1994). See also, the example statutory process preambles set forth at id., page 2100-18 (Rev. 1 Feb. 2003).

In the Office Action, the position was taken that claims 9-11 were non-statutory because "the claims are not tangibly embodied-software per ser." Initially, it is not clear to applicant what this statement means. Claim 9 is an *apparatus* claim that recites elements forming a part of the apparatus. As such it is believed clearly statutory. Withdrawal of the rejection is respectfully requested.

With respect to claim 16, Applicant comments as follows. The Office Action took the position that claim 16 is non-statutory because "non-functional descriptive material on a medium is claimed, the tree structure is not tangibly embodied on the medium, and the tree structure is not claimed on the medium." This is incorrect.

Applicant refers the Examiner to MPEP Section 2106, IV, B. 1. As is made clear in that section, non-functional descriptive material consists of music, literary works and the like. Such data does not impart functionality to the underlying substrate and a claim directed to storage medium containing music, for example an audio CD, would not be statutory.

On the other hand, *functional* descriptive material consists of, among other things, data structures, i.e., physical or logical relationships among data elements, designed to support specific data manipulation functions. Such material recorded on a computer readable medium is statutory. See id., citing In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994).

Claim 16 is clearly directed to a storage medium having stored thereon *functional* descriptive material as defined above, not non-functional descriptive material, as alleged in the Office Action. As such, claim 16 is believed clearly statutory. Minor amendments to claim 16 have been effected which make it even more clear that that claim recites statutory subject matter. It is believed clear that the rejection based on Section 101 has been overcome, and its withdrawal is requested.

Claims 1-23 were rejected under 35 U.S.C. § 103 as obvious from U.S. Patent 5,848,409 (Ahn). Applicant notes that claims 1-5 were cancelled solely because they were deemed to define non-statutory subject matter. Substantially the same subject matter is recited in claims 16-20 in the form of computer medium claims.

Independent claims 6, 9, 13 and 21 were amended to broaden those claims. The broadened claims are believed patentable for at least the following reasons.

Independent claim 6 is directed to a computerized method for controlling storage and retrieval of data in a memory device by constructing a data structure in which items of data are stored for search. The method comprising: a) forming an assumed tree structure in which all the items of data are stored; b) sequentially selecting a node from the assumed tree structure to select a sub-tree structure designated by the selected node; c) forming an equivalent table storing a portion of the items of data corresponding to the selected sub-tree structure in a table form; d) determining whether the selected sub-tree structure satisfies one or more predetermined conditions; and e) when the selected sub-tree structure satisfies the one or more predetermined conditions, replacing the selected sub-tree structure with the equivalent table to construct the data structure.

As a result of the recited structure, because selected sub-tree structures of an assumed tree structure are replaced with an equivalent table, the amount of memory required for the data structure is reduced, without increasing the time required to search the data structure.

Ahn, as understood, shows a method for electronically searching through documents. Toward this end, a group tree 202 and a group index table 204 is established for a group of documents. The group tree is a tree data structure, such as a binary tree, that includes a node for each searchable item. Associated with each node are pointers to the occurrences in a group index table of the searchable item. Once the searched-for term (node) is found by searching the tree, the pointers stored at the node allow access to the index table, where the occurrences of the term in various documents is kept in tabular form, as shown in Fig. 2. Ahn also shows, at Fig. 3, a document tree and document index that function in much the same way, but with regard to an individual document, instead of a group of documents.

The trees taught in Ahn are complete as described. That is, they contain all of the words intended to be made searchable by the search system of the invention. There is no teaching whatsoever of, inter alia, forming an assumed tree structure in which all the items of data are stored, sequentially selecting a node from the assumed tree structure to select a sub-

16

tree structure designated by the selected node, forming an equivalent table storing a portion of the items of data corresponding to the selected sub-tree structure in a table form, and replacing the selected sub-tree structure with the equivalent table to construct the data structure. Contrary to the position taken in the Office Action, the index tables of Ahn do not substitute for a portion of an assumed tree structure. The purpose of Ahn's tree structure is to allow searching of the index. There is no teaching or remote suggestion in Ahn, inter alia, that the index forms, or ever formed, a part of an assumed tree structure storing all of the data.

For at least this reason, claim 6 is believed clearly patentable over Ahn. Independent claim 9 (apparatus), claim 13 (system) and claim 21 (computer medium) each recite, inter alia, features substantially similar to those discussed above in connection with claim 6 and are believed to distinguish over Ahn for at least the same reasons.

New independent claim 28 also recites, inter alia, features substantially similar to those discussed above. Accordingly, that claim is believed clearly to distinguish over Ahn.

Claim 16 is directed to a storage medium for use in a search system in which items of data from an assumed tree structure that includes all of the items of data are stored for search as computer-readable items of data in a data structure. The storage medium stores the data structure, which comprises: a tree structure in which the items of data are stored except for a portion of the items of data corresponding to a sub-tree of the assumed tree structure, which is a selected portion of the assumed tree structure; and an equivalent table storing the selected portion of the items of data in table form. Applicant has found no teaching or suggestion in Ahn, discussed above, of the features recited in claim 16. Accordingly, claim 16 is believed patentably distinguished from Ahn. Claim 12 is directed to a search system and recites features similar to those recited in claim 16. Claim 12 is believed to distinguish over Ahn for similar reasons.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention,

however, the individual consideration, or reconsideration, as the case may be, of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Dated: June 26, 2003   Respectfully submitted,

By _____
Joseph W. Ragusa
Registration No.: 38,586
DICKSTEIN SHAPIRO MORIN &
    OSHINSKY LLP
1177 Avenue of the Americas
41st Floor
New York, New York 10036-2714
(212) 835-1400
Attorneys for Applicant